Synthesis, structure and luminescence of novel lanthanide containing coordination polymers

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Summary
Several new lanthanide coordination polymers were synthesized and characterized through X-ray powder and single crystal diffraction and luminescence spectroscopy.

Keywords
Coordination polymers, Rietveld refinement

Terephthalate coordination polymers
Four new terephthalic acid linked coordination polymers were synthesized, containing praseodymium, neodymium, samarium and europium.[1] The compounds that did not yield crystals suitable for single crystal analysis were Rietveld-refined based on the powder diffraction patterns. In this series of compounds, the lanthanide contraction was perceived through a proportionate distortion of the crystal lattice. The europium-containing coordination polymer exhibited bright luminescence in the visible (red) region of the spectrum.

Neodymium pyridinedicarboxylate coordination polymer
A neodymium homologue of 2,5-pyridinedicarboxylic acid-based coordination polymers was also synthesized and characterized.[2] The compound showed typical Nd^{3+} centered near infrared luminescence.

References
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2. J. Huang, *J. Solid State Chem.* **181**, 1731-1737 (2008).